A M A T E U R   R A D I O   P U B L I C   S E R V I C E   C O M M U N I C A T I O N S

A Resource Guide for ARES, RACES, EmCom or Public Service Communication activities

Amateur Radio Resource Typing enables amateur radio communicators, emergency managers, staging managers, EmCom Leaders and event coordinators to identify request and receive consistent, standardized and coordinated amateur radio resources needed during an emergency, disaster or event. It identifies, categorizes and labels communications functions amateur radio operators typically perform at events and incidents for easy reference. By using these Communications Resource Functions presented here, mutual aid resources are easier to request and supply and event or incident assignments can be quickly made by staging managers or event coordinators.

This Guide is an aid in creating a resource standard for all Amateur Radio mutual aid and EmCom groups.

Basic Communications Resource Functions[1]

Common Items for all Communications Resource Functions (CRF)

- ☐ Copy of amateur radio license, badge/ID, and photo drivers license
- ☐ Writing material; pen, pencil, writing pad, and message forms
- ☐ Transceiver operating instructions or summary guide
- ☐ Portable power source meeting equipment needs for a minimum of <u>12 hours</u> of typical operation (Medium to Long Assignments may require additional power sources)
- ☐ Vehicle power port and clip lead power adapters, equipment fuses and power cords
- ☐ All equipment ARES/RACES standardized (Powerpole™, PL-259, 1/8" speaker plug)
- ☐ Mission suitable personal support gear (Refer to local group standard kit lists; adjust for duration)
- ☐ Duct tape, miscellaneous adapters and comfort items (food, water, optional chair and table)

◇   **A Type I CRF includes recommended items | A Type II CRF is without recommended items**   ◇

Communications Resource Function S - (<u>S</u>hadow | VHF/UHF)

CRF-S identifies the function and basic amateur radio equipment for operation of as a "foot mobile" station while shadowing an event or incident official.

- ☐ Hand-held, 2 Meter (2M/70Cm Recommended) FM synthesized transceiver with programmable CTCSS, 2.5 watts minimum output
- ☐ Earphone or Headset attachment (VOX disabled)
- ☐ Adapter cable/bracket or magnetic mount antenna for temporary vehicle duty with shadow

Communications Resource Function B - (<u>B</u>ase | VHF/UHF)

CRF-B identifies the function and basic amateur radio equipment for portable operation as Base, Rest Stop, Shelter, Net Control, etc. or fixed location station.

- ☐ 2 Meter (2M/70Cm Recommended) Transceiver with programmable CTCSS, 25 watts minimum output (HT+amplifier combination is a viable alternative)
- ☐ Gain antenna (dual band recommended) with mast and support, 25' minimum coax cable with PL259 connectors, PL258 coupler (Additional 25' or longer RG8X or better coax cable recommended)
- ☐ External speaker with 1/8" phone plug and/or earphones or headset attachment with VOX disabled

Communications Resource Function M - (<u>M</u>obile | VHF/UHF)

CRF-M identifies the function and basic amateur radio equipment for mobile operation as a station in a moving vehicle such as a car, truck, van, aircraft, boat or bus.

- ☐ 2 Meter (2M/70Cm Recommended) Transceiver with programmable CTCSS, 25 watts minimum output (HT+amplifier combination is a viable alternative)
- ☐ Gain antenna (dual band recommended) with magnetic base with 15' of coax cable with PL259 connector
- ☐ External speaker with 1/8" phone plug and/or earphones or headset attachment with VOX disabled

Communications Resource Function H - (Long-Range Communications | <u>H</u>F) [2]

CRF-H identifies the function and basic amateur radio equipment for portable or mobile operation of a station for long and intermediate range communications. General Class or higher License required.

Sub Functions: **Hp**, Field <u>P</u>ortable; **Hm**, <u>M</u>obile (suitable for in vehicle use)

- ☐ All modes HF SSB DC Transceiver with auto-tuner, 100 Watts output minimum
- ☐ HF Antenna(s), mast and support accessories, 50' coax cable with PL259 connectors. (Additional 50' – 100' RG8X or better coax cable recommended) PL258 coupler with each coax cable. Common bands are 20, 40, 60, 80 & 160 meters. 40M, 60M & 80M preferred for EmCom support. NVIS capability recommended for tactical situations
- ☐ Earphones and/or headset, miscellaneous coax and power adapters

Notes:
1. To request only a CRF operator, use Communications Resource Operator (CRO) with appropriate designation
2. For MARS operations, equipment/capabilities must meet unit's operational requirements
3. For permanently installed CRF equipment, the modifier "**/F**" for fixed is added to CRF (i.e., CRF-M/F)

◇ *This guide details radio equipment and does not include general personal support gear or 24/72 hour kit items* ◇

AMATEUR RADIO PUBLIC SERVICE COMMUNICATIONS
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Specialty Communications Resource Functions[1]

◇ **A Type I CRF includes recommended items | A Type II CRF is without recommended items** ◇

Communications Resource Function DA - (Data - APRS Operations | VHF/UHF)

CRF-DA identifies the function and basic amateur radio equipment for operation as an Automatic Positioning/Packet Reporting System providing the event or incident official(s) with a "view" of resource positions in real time along with short messaging capability.

- ☐ CRF-B resource equipment
- ☐ Terminal Node Controller (TNC) with necessary cables, accessories, and documentation
- ☐ Computer (laptop or other) suitable for portable operations and running mission applicable amateur radio software – (Printer, printing supplies and AC adapter recommended)
- ☐ Software: APRS with digipeating capability

Communications Resource Function DT - (Data – Resource Tracking| VHF/UHF)

CRF-DT identifies amateur radio equipment used for tracking of a mobile asset or other resource as requested by event or incident officials for display with CRF-DA equipment.

- ☐ Self contained pre-packaged portable equipment unit containing transceiver, antenna, Global Positioning Satellite (GPS) unit, APRS tracking encoder, power unit, and necessary external cabling

Communications Resource Function DM - (Tactical Data Messaging | VHF/UHF)

CRF-DM identifies the function and basic amateur radio equipment for operation as a "last mile" data messaging system providing event or incident officials with traceable messaging and/or "radio Email" capability.

Sub Functions: **DMw**, Winlink capable; **DMp** packet capable

- ☐ CRF-B resource equipment
- ☐ Terminal Node Controller (TNC) with necessary cables, accessories, and documentation
- ☐ Computer (laptop or other) suitable for portable operations and running mission applicable amateur radio software – (Printer, printing supplies and AC adapter recommended)
- ☐ Software: Paclink, Airmail, compatible email and user group's standard Packet program(s)

Communications Resource Function DH - (Long-Range Data Messaging | HF) [2]

CRF-DH identifies the function and basic amateur radio equipment for portable operation as a long range data messaging system providing event or incident officials with traceable messaging and/or "radio Email" capability.

Sub Functions: **DHw**, Winlink capable; **DHr**, Winlink Routing (Unique hub/routing function) [5]

- ☐ CRF-Hp resource equipment (General Class License or higher required for operation)
- ☐ Pactor I, II and/or III capable modem (Pactor III recommended) | WINMOR a viable alternative
- ☐ Computer (laptop or other) with monitor suitable for portable operations capable of running mission applicable amateur radio software – (Printer, printing supplies and AC adapter recommended)
- ☐ Software: Airmail, Paclink, RMS Packet, RMS Relay, RMS Express, Email, user group's specialty modes
- ☐ Sound Card Interface and accessories required to support software based communications modes
- ☐ CRF-DM resource equipment & Pactor III modem required for Sub Function **DHr**
  Note: If WINMOR used to facilitate CRF-DHw, a sound card interface is required.

Communications Resource Function DN - (Data Networking | UHF)

CRF-DN identifies basic equipment for a field deployable 802.nna resource providing a wireless node(s) in support of event or incident communications. Equipment should be capable of operating on +12vDC.

- ☐ Self contained "802.11 repeater" unit functioning as a Bridge/Router/Access Point including antenna
- ☐ Minimum of 50' Cat 5 cable and POE interface
- ☐ Wired/wireless access point unit.
- ☐ Associated networking support equipment (Mast, aiming device, CAT5 cable, jumpers, etc.)

Communications Resource Function AV - (Amateur TV | UHF)

CRF-AV - Portable amateur television (ATV) equipment for transmitting and receiving video information (TBD)

CRF Assignment Durations

- ☐ Short – Up to 12 hour duration (Shifts)
- ☐ Medium – 12 to 72 hour duration (Shifts)
- ☐ Long – 72 hour or greater duration (Typically an away assignment)

Notes: 4. D-Star digital transceivers when requested in a CRF shall have the modifier "/D*" added to CRF
5. Special VHF data to/from HF data hubbing function requiring Pactor III

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